

## 1330.0 - Education News, October 2009

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## Education News - October, 2009

This newsletter highlights the latest curriculum related teaching resources, student activities and statistical tools that have been developed by ABS Education Services as well as other ABS resources that are useful for schools.

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### 1. CensusAtSchool News



**NOW is the time to set up a CensusAtSchool Teacher Account! Register ONLINE!**

The Australian Bureau of Statistics is pleased to announce the CensusAtSchool Questionnaire will run annually from 2010.

Students will once again have the opportunity to be part of the Australian CensusAtSchool database. The live 2010 questionnaire will open on **27 January** next year, then close before the new data is added to the Random Sampler in July 2010.

CensusAtSchool has previously found that 73% of Australian students had broadband internet at home in 2008, compared with 53% in 2006, their favourite take-away food was Pizza/Pasta and 45% of students travelled to school by car. What will the data show in 2010?

#### New online registration form

For the first time, participation in CensusAtSchool has been streamlined to make it easier for teachers to get their students involved. A new online registration form is now available, enabling teachers to directly create an account. This means teachers do not need a School Participation Number (SPN) to get involved. Simply set up a CensusAtSchool Teacher Account from the CensusAtSchool web pages. It's quick and simple!

The new online form involves searching for your school using a postcode or keyword search, creating a username and password. Once a teacher sets up an account, it will remain active year after year. The account will contain Student Access Numbers (SAN) that students require to submit a questionnaire in 2010. Remember, the more schools that participate, the richer the data resource for teachers and students to use in the classroom.

#### The 2010 Questionnaire

The 2010 online questionnaire will retain most of the questions from previous projects, but it will be shorter than both the 2006 & 2008 questionnaires. Students respond to a set of non-intrusive questions about their lifestyle, income sources, opinions, technology use, physical characteristics, eating habits, reaction times (and much, much more). Once the questionnaire closes, the data is pooled into a nation-wide database and returned via the Random Sampler facility, enabling students to generate random samples of real data.

Please note all data collected from CensusAtSchool questionnaires is available FREE online for students and teachers to use any time. A password is not required to access CensusAtSchool data.

### What students are saying...

The response from the education sector so far has been very positive. Students are engaged by real data about themselves and their peers. In fact, students love it! View some of the feedback from the CensusAtSchool Community pages and see for yourself.

Here's what some Year 9 students from Mathew Flinders Girls Secondary College said about using CensusAtSchool data in their 'Who AM I?' unit:

*"It was more than reading out of a textbook....you actually had to find the information, search for it."*

*"It was really interesting to see how different all the heights were compared to us."*








**How to get involved:** Please visit **How To Get Involved** for more details about how you can get on board in 2010! Please contact the **CensusAtSchool Team** if you have a query or if you would like to provide some feedback. We'd love to hear from you.

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## 2. New Education Services Web pages

You may have noticed that the Education Services web pages have been updated and improved. We have reorganised the content so that it will be easier for you to find the specific information that you want. The For Teachers pages now include categories 'Resources for the Classroom' and 'Assistance for Teachers' as well as direct links to Indigenous Statistics for Schools, CensusAtSchool, games and the Education News newsletter.

### Resources for the Classroom





	<b>By Subject</b> Search for resources by subject.
	<b>Indigenous Data</b> Explore Indigenous data and create your own population pyramid.
	<b>Datasets</b> Social and Economic datasets simplified from standard ABS publications.
	<b>Accessing Census Data</b> Links to Census data online products. Easy to use, perfect for your next assignment!
	<b>Senior Curriculum Resources</b> Relevant links to ABS publications for Economics and Business classes.
	<b>Teacher Submitted Activities</b> Activities submitted by educators. All use ABS data sources.
	<b>A Tale of Two Worlds</b> A free CD packed with interactive games and learning opportunities. Shows students the Census' role in democracy.

The Resources for the Classroom section has ABS resources organised by subject, links to Indigenous data, Datasets for classroom use, Census data and more. This should make it quicker for you to find just the resource you want for a particular use.


### Assistance For Teachers page:

The Assistance for Teachers pages link all the resources that you need to assist you both use ABS data and understand statistical concepts. We discovered from your feedback that these were some of the pages you found most useful, but they were previously quite hidden. Now all the help you need is accessible from one set of pages.


As well, there is a link from the teachers pages directly to the Games pages. The games were designed by The Le@rning Federation to reinforce difficult statistical concepts in engaging and pedagogically sound ways. For example by using the computer generator, thousands of trials can be conducted in a few seconds helping

	<b>To Use our Resources</b> Find out what's available from the Education Services pages and get help with using ABS publications.
	<b>Online Professional Development</b> View a series of online tutorials focused on using CensusAtSchool data in Excel, and other self-directed learning materials to make the best use of ABS data.
	<b>Teaching Statistics</b> Includes statistical concepts and definitions, steps in running a survey, defining statistical literacy and Stats Fact Sheets.
	<b>Glossary</b> A glossary of statistical terms and how to calculate basic statistical measures.

students grasp concepts about probability and random samples.

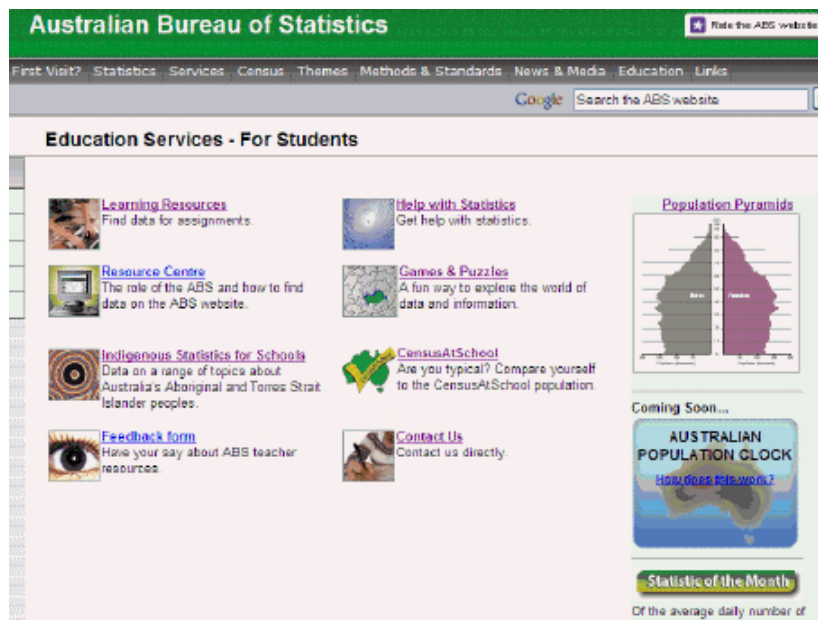

**For Career Advisors**  
 A range of resources designed to help career advisors promote statistics as an exciting career path for students.

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**Education Links**  
 A brief list of Statistical Organisations and Subject Associations website links.

## For Students Pages

The new For Students pages have also been redesigned to make it easier for students to find what they are looking for. Learning Resources has links by subject as well as links to Indigenous Data, Census data and specially designed Datasets. The students' Help with Statistics pages are similar to those for teachers and aim to make it easier for students to find out about statistics as well as ABS resources.



The student pages also include direct links to the ABS population pyramids and (coming soon) a direct link to the Population Clock (a perennial favourite).

Please have a look at our new pages and let us know what you think. There is a link to the on-line Feedback form from the For Teachers page or you can contact us using the details below.

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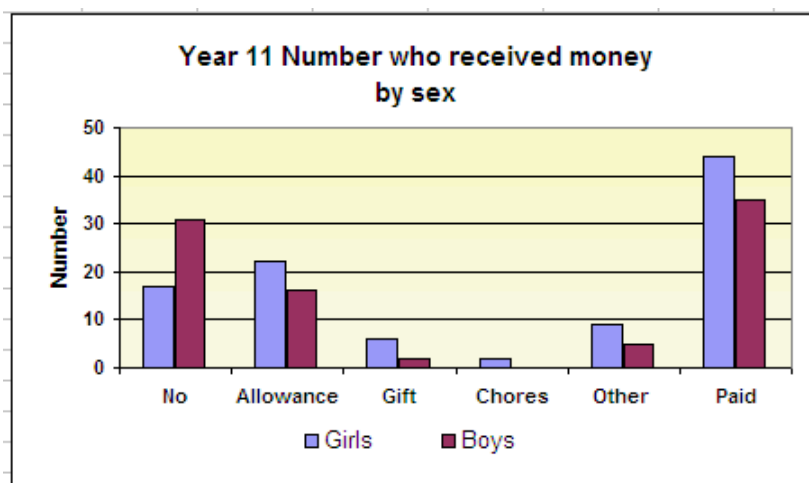
## 3. An Idea for the Maths Classroom - Student Income



What proportion of students in each year level received money in the week before the CensusAtSchool data was taken? How does your class compare? Is this the same for boys and girls? How did students get their money: an allowance? work? gift? paid employment?

These are the sorts of questions that can be answered using CensusAtSchool data. CensusAtSchool activities also mean students must address statistical concepts such as population and sample, as well as sample size. It requires students to make decisions about 'dirty data': what constitutes an outlier? when can an outlier be ignored? what should we do with missing data?

It also helps students develop their facility with graphical representation. When is it appropriate to use which type of graph? Students must also grapple with concepts of mean, median and mode. Which is most useful in which context? When is it not appropriate to calculate a



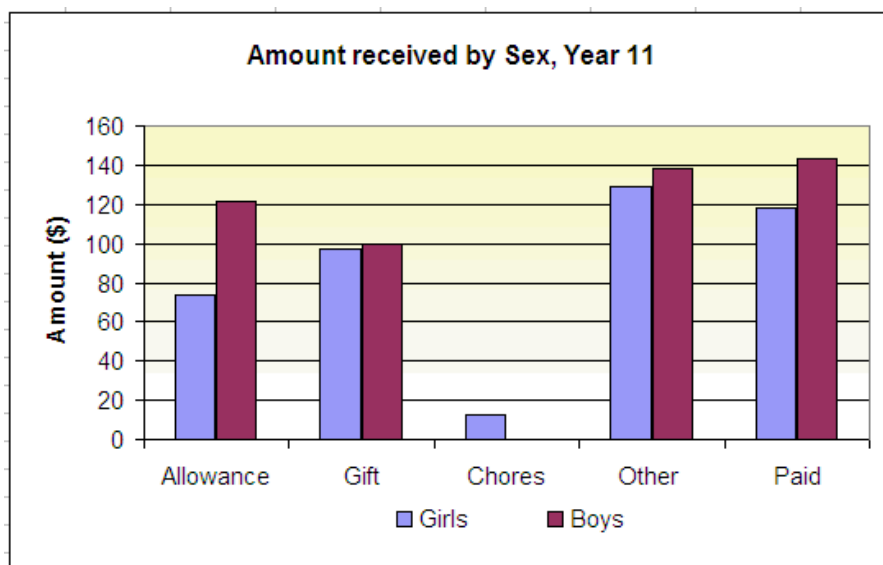
mean? This activity will also help students recognise the importance of variability in statistics and that measures of central tendency by themselves are not sufficient to describe data.

### What to do:

1. Divide the class into 12 groups. The groups will each select different samples: one each for each year level with girls and boys separately.

#### Have each student:

2. Draw an appropriate sample of 100 students from the random sampler. (Some groups will have to use smaller sample sizes due to the smaller number of submitted questionnaires for that group.)
3. Organise the data (delete unwanted columns, sort, etc). (The online tutorials can show you how.)
4. Graph the frequency of each category (no income, allowance, paid work, etc).
5. Calculate the average income received for each category.
6. Graph the average income by category. (Is average the appropriate measure? By looking at the variability of the data, you can discuss whether the median may be a better measure than the mean. Students can see the effect of outliers.)
7. Have students share their results so that they can compare girls and boys, and different year levels.



Are there any differences between the groups? How does your class compare to the CensusAtSchool population? What may explain any differences?

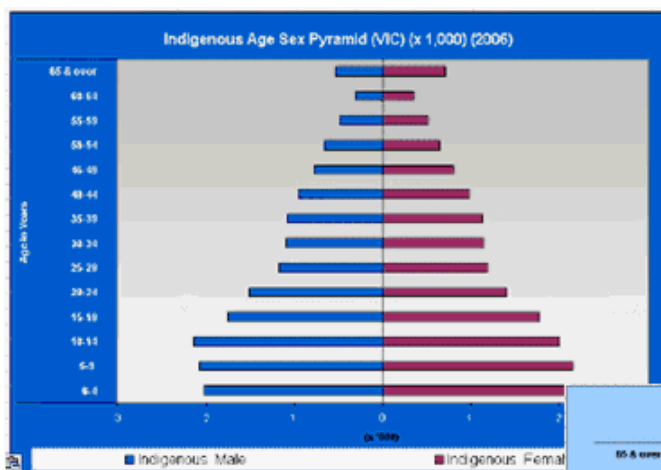
You could also have your students compare the number of hours worked with the number of hours spent on homework? Is there a relationship?

**Do you have a classroom idea that uses ABS data or ABS Education products? Let us know at [education@abs.gov.au](mailto:education@abs.gov.au) and we can share it with schools around Australia.**

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## 4. New Interactive Age-sex Population Pyramids

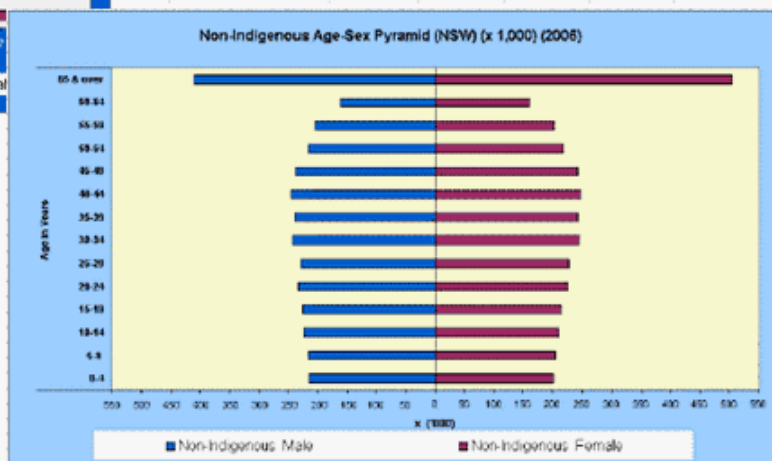
More interactive population pyramids are now available from the Datasets pages. These new datasets allow students to create age-sex population pyramids for both the Indigenous and non-Indigenous populations for their home state or territory. They are an engaging way for students to use real ABS data to quickly examine demographic differences and similarities.



VIC	Indigenous		Non-Indigenous	
	Males	Females	Males	Females
0-4 years	2,023	2,057	160,149	152,342
5-9 years	2,074	2,152	163,100	154,103
10-14 years	2,137	2,013	170,548	161,653
15-19 years	1,753	1,784	176,711	167,930
20-24 years	1,513	1,414	185,509	180,197
25-29 years	1,170	1,199	178,288	175,286
30-34 years	1,092	1,146	185,489	188,621
35-39 years	1,079	1,134	191,061	195,511
40-44 years	959	990	186,766	190,905
45-49 years	779	804	180,206	184,566
50-54 years	687	654	164,297	167,254
55-59 years	489	517	151,747	156,327
60-64 years	312	356	119,326	120,838
65 years and over	534	716	305,290	379,003
<b>Total</b>	<b>16,581</b>	<b>16,936</b>	<b>2,518,487</b>	<b>2,574,536</b>

**NSW**

	Indigenous		Non-Indigenous	
	Males	Females	Males	Females
0-4 years	9,853	9,252	214,133	202,943
5-9 years	9,965	9,402	215,966	206,040
10-14 years	10,173	9,712	223,343	212,417
15-19 years	8,589	7,809	225,898	215,377
20-24 years	6,500	6,123	232,788	226,737
25-29 years	4,872	5,003	228,922	227,919
30-34 years	4,810	5,241	241,762	245,486
35-39 years	4,674	5,247	239,765	243,850
40-44 years	4,190	4,803	245,856	247,743
45-49 years	3,652	3,980	238,398	243,213
50-54 years	2,969	3,091	216,952	220,000
55-59 years	2,215	2,385	204,327	203,978
60-64 years	1,545	1,567	161,986	162,054
65 years and over	2,222	2,841	408,175	506,374
<b>Total</b>	<b>76,229</b>	<b>76,456</b>	<b>3,299,271</b>	<b>3,364,131</b>

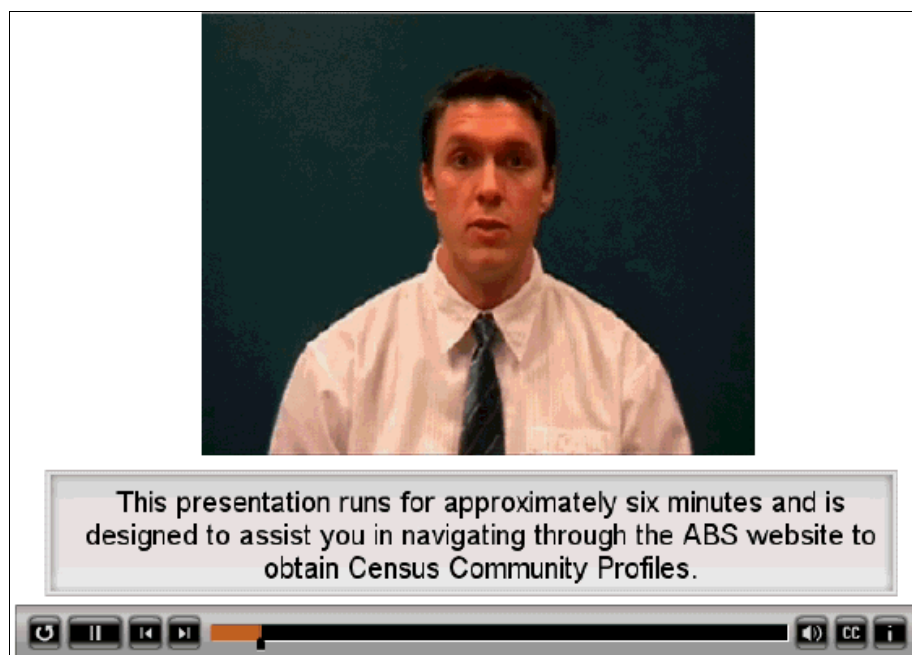


You can find them in the under the Datasets section.

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## 5. Online Video Tutorials

The ABS website includes a growing number of [online video tutorials](#) to help you make the best use of our resources. These resources include help to navigate and search the website, assistance using Census data such as the Basic Community Profile and CData online, how to find CPI data and help finding Indigenous data. There is also a tutorial on understanding ABS geographic groupings.



National Regional Profiles, which bring together data from the Census as well as other collections, for small areas (such as local government areas) have also developed an online video tutorial.


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## 6. Final Statsmart Conference

After three years of fun, hard work and great collaboration the StatSmart project is drawing to a close. (Some excerpts from participants' posters are included throughout this report.)


# Do tall people have big feet?



Peter Allison and Shaun Barber – Lockleys Primary School SA

**What worked well?**  
*It goes without saying that TinkerPlots has been an invaluable tool to collect and analyse data. Students loved using it. Learning tasks were most successful when data were collected about the students or related to their age group. This activity was an excellent example of this and allowed students to discuss questions such as: What will the data look like as a graph? Is foot size in direct correlation to height? What would be a reasonable sample size? Does age and gender make a difference? When do feet stop growing?*


**Student work samples**



**What have you learned in StatSmart?**  
*Our focus has been with using TinkerPlots to better understand data collection and statistical representation. We have only scratched the surface in regards to developing concepts and skills in statistical analysis. We need to revisit activities from the 'Digging into text and spend more time using the ABS data set. One last thing: Melbourne is a great place to buy 1am!*

**How did students react to StatSmart?**  
*The students were extremely responsive to collecting and analysing data. They also loved using the TinkerPlots software to manipulate their data. It also allowed teachers and students to focus on concepts in an interesting and visual way, for example, in understanding mean, median, mode and outliers. It allowed students to develop their own*

The final conference was held in the Melbourne ABS offices on 20 and 21 July, 2009 and final data is being collected over the next few months. StatSmart was an ARC Linkages funded longitudinal research study involving University of Tasmania, The Noel Baker Centre for School Mathematics, Key Curriculum Press, the ABS and more than 40 teachers from 3 states (and importantly their students). Students from Grade 5 to Year 9 were involved in the project.



## Sacred Heart College

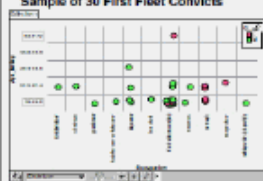
Louisa Pugh, Michelle Connolly, Anthony Deary, Monique Bell, Daniel Martin

**Summarise**  
 Each year the students first term time is facilitated themselves with TinkerPlots and completed exercises from 'Digging into Text' as a preparation for that term. We looked at the data from the Census and HILDA surveys to find out how many people live in our state and how many live in our country. Our first Unit involved an integrated approach with our 2008 theme 'The Great War'. We looked at the data from the Census and HILDA surveys to find out how many people live in our state and how many live in our country. Our second Unit involved an integrated approach with our 2008 theme 'The Great War'. We looked at the data from the Census and HILDA surveys to find out how many people live in our state and how many live in our country.

**What resources/contexts did you use?**  
 We used a database made from our own data and other classes around the school. We used the Census and HILDA surveys to find out how many people live in our state and how many live in our country. We used the Census and HILDA surveys to find out how many people live in our state and how many live in our country.

**What statistical ideas were taught?**  
 The students used the data to find out how many people live in our state and how many live in our country. They used the data to find out how many people live in our state and how many live in our country.

**Sample of 30 First Fleet Convicts**



**What have you learned in StatSmart?**  
 The students used the data to find out how many people live in our state and how many live in our country. They used the data to find out how many people live in our state and how many live in our country.

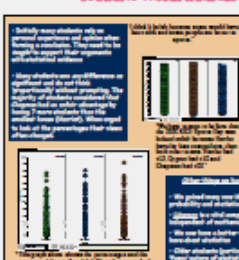
Teachers used data such as CensusAtSchool and the Tinkerplots software to assist their students engage with statistical concepts. The researchers collected data from both students and teachers over the three years and preliminary results show that there was a significant improvement in the level of statistical understanding for both students and teachers. This improvement was shown across all year levels. One particularly powerful aspect of this research is that many of the same students have been followed over the three years allowing the researchers to examine the impact of the StatSmart project longitudinally. The principal researchers, Dr Rosemary Callaghan and Dr Jane Watson from the University of Tasmania, will be analysing the data over the next few months. 'To have longitudinal data of this size and quality is very unusual in this area. We are very excited to see what the full data will tell us'.

As can be seen from the excerpts of posters, the range of activities was very broad and the range of students was very broad. The enjoyment (by both teachers and students) and the positive outcomes however, were very similar. All of the teachers mentioned the excellent and engaging professional development that was conducted each year at the ABS offices in Melbourne by Anthony Harradine (from the Noel Baker Centre for School Mathematics), Cliff Konold (from Key Curriculum Press), Jane Watson and Rosemary Callaghan. For two days each year the teachers were challenged and extended by hands on activities that stretched their understanding of statistical concepts and gave them the tools to address the misconceptions that many of their students will bring to the classroom. We will keep you

# Was Sports Day Rigged?

David George and Annetta Johnston

**STUDENT WORK SAMPLES AND WHAT WE'VE LEARNED IN STATSMART:**



**WHAT WE'VE LEARNED:**

- Using a class discussion to help students understand the concept of a fair test.
- Using a class discussion to help students understand the concept of a fair test.
- Using a class discussion to help students understand the concept of a fair test.

**WHAT WE'VE LEARNED:**

- Using a class discussion to help students understand the concept of a fair test.
- Using a class discussion to help students understand the concept of a fair test.
- Using a class discussion to help students understand the concept of a fair test.

informed of the study's results as they are published.

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## 7. Recently Released Publications

Remember, **all** ABS publications are **free** to download from the **ABS website**.

Marriages and Divorces, Australia 2008 ( cat. no. 3310.0)

Marriage and divorce statistics provide valuable information for the analysis of family formation and structure in Australia. This electronic product presents data at the national and state level.

Marriages data is presented by age, previous marital status, country of birth and relative country of birth of both males and females, type of celebrant and whether couples live together prior to marriage. Crude and age-specific marriage rates are also provided.

Divorces data is presented by age, duration of marriage at final separation and at date made absolute, country of birth and number of children.

Recorded Crime - Offenders, Selected States and Territories, 2007-08 (cat. no. 4519.0)

This publication provides a profile of alleged offenders, including their age, sex, Indigenous status, principal offence, how often they have been proceeded against by police within the 12 month reference period, as well as a count of proceedings that may result in court actions. Data are available for selected states and territories.

Labour Force Experience, Australia, February 2009 (cat. no. 6206.0)

Labour force experience can be described in terms of labour force activities undertaken by persons in a 12-month period, namely working and looking for work. Details include the number of weeks spent working, looking for work, or out of the labour force during the year. Estimates can be cross-classified by labour force demographics such as state, sex, age and marital status and birthplace.

Industrial Disputes Australia, June 2009 (cat. no. 6321.0.55.001)

This publication gives the number of disputes, employees involved, working days lost and working days lost per 1,000 employees in industrial disputes involving stoppages of work of 10 working days or more, classified by state, industry, cause of dispute, working days lost per employee involved and reason work resumed.

Cultural Funding by Government, Australia, 2007-08 (cat. no. 4183.0)

Contains estimates of funding for arts and cultural activities by the three levels of government in Australia.

Demography News, Aug 2009 (cat. no. 3106.0)

Demographic statistics provide measures of the Australian population, its size, growth, composition and geographic distribution, as well as the components that shape population change: births, deaths and migration.

This newsletter provides information about the latest demographic research and analysis being undertaken by the Australian Bureau of Statistics.

Use of Internet on Farms, Australia, 2007-08 (cat. no. 8150.0)

This data, sourced from the annual Agricultural Resource Management Survey, provides regional statistics on farm use of the internet.

You can view the full range of previously released publications and upcoming releases from the ABS home page under **Product Releases**.

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## 8. Contact details

How to contact **ABS Education Services**

**Free Call:** 1800 623 273

**email:** [education@abs.gov.au](mailto:education@abs.gov.au)

**Mail:** GPO Box 2796

Melbourne, 3001

## Subscribe

**Education News** is a totally free resource that aims to assist teachers use ABS data in their classroom. When you **subscribe** you will be notified of each new edition as it is published.

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